

## CLAIMS

What is claimed is:

1. A plug error insertion prevention system that prevents a plug intended for use with a specified plug insertion socket of a plug insertion section from being inserted into an incorrect plug insertion socket of the plug insertion section, the system comprising:

the plug which includes:

first identification information storage means that stores first identification information for identifying the specified plug insertion socket corresponding to the plug;

plug insertion socket information transmission means that sends the first identification information to a desired plug insertion socket;

response information receiving means that receives response information from the plug insertion section; and

plug state notification means that notifies a system user of the plug state relative to the desired plug insertion socket based on the response information received by the response information receiving means, and

the plug insertion section which includes:

second identification information storage means that stores second identification information for identifying the plug corresponding to the specified plug insertion socket;

first identification information receiving means that receives the first identification information from the plug;

identification information comparing means that compares the first identification information received by the first identification information receiving means and the second identification information;

response information generation means that generates response information to the plug based on a comparison result of the identification information comparing means;

response information transmission means that sends the response information generated by the response information generation means to the plug; and

plug insertion socket state notification means that notifies the system user of the plug insertion socket state relative to the plug.

2. The plug error insertion prevention system according to claim 1, wherein:

the plug is equipped with a contactless identification tag; and

the contactless identification tag is equipped with the first identification information storage means that stores first identification information, the plug insertion socket information transmission means, the response information receiving means, and the plug state notification means.

3. The plug error insertion prevention system according to claim 1, wherein:

the plug is equipped with electric power generation means that generates electric power for driving the plug with an electromagnetic wave transmitted from the plug insertion section, and

the plug insertion section is equipped with power supply transmission means that transmits an electromagnetic wave for supplying electric power to the plug.

4. The plug error insertion prevention system according to claim 1, wherein the plug state notification means includes a plug state display section that displays specified information to notify the system user of the plug state.

5. The plug error insertion prevention system according to claim 4, wherein the plug state display section includes a light emitting element, and notifies the system user of the plug state by a mode of light emission.

6. The plug error insertion prevention system according to claim 5, wherein the plug state display section is disposed at a specified position of the plug at which a correct insertion position of the plug relative to the plug insertion socket can be guided.

7. The plug error insertion prevention system according to claim 5, wherein the plug state notification means changes the mode of light emission of the light emitting element according to positions of the plug with respect to the plug insertion socket.

8. The plug error insertion prevention system according to claim 1, wherein the plug insertion socket state notification means includes a plug insertion socket state display section, that displays specified information to notify the system user of the plug insertion socket state.

9. The plug error insertion prevention system according to claim 1, wherein the plug insertion socket state display section includes a light emitting element, and notifies the system user of the plug insertion socket state by the mode of light emission.

10. The plug error insertion prevention system according to claim 8, wherein the plug insertion socket state display section is disposed at a specified position of the plug insertion section at which a correct insertion position of the plug can be guided when inserting the plug into the plug insertion socket.

11. The plug error insertion prevention system according to claim 9, wherein the plug insertion socket state notification means changes the mode of light emission of the light emitting element according to positions of the plug with respect to the plug insertion socket.

12. The plug error insertion prevention system according to claim 1, wherein:

the first identification information includes characteristic information of an authorized user of the plug;

the plug insertion section is equipped with usability judging means that judges whether the plug can use the specified plug insertion socket of the plug insertion section based on the characteristic information; and

the response information generation means generates the response information based also on a judgment result of the usability judging means.

13. A plug error insertion prevention system comprising:

a plug; and

a plug insertion section;

wherein the plug comprises:

first identification information storage means that stores first identification information for identifying a specified plug insertion socket corresponding to the plug;

plug insertion socket information transmission means that sends the first identification information to a desired plug insertion socket of the plug insertion section;

response information receiving means that receives response information from the plug insertion section; and

plug state notification means that notifies a system user of the plug state relative to the plug insertion socket based on the response information.

14. A plug error insertion prevention system comprising:

a plug; and

a plug insertion section;

wherein the plug insertion section includes:

second identification information storage means that stores second identification information for identifying the plug corresponding to a specified plug insertion socket of the plug insertion section;

first identification information receiving means that receives first identification information from the plug;

identification information comparing means that compares the first identification information received by the first identification information receiving means and the second identification information;

response information generation means that generates response information to the plug based on a comparison result of the identification information comparing means;

response information transmission means that sends the response information generated by the response information generation means to the plug; and

plug insertion socket state notification means that notifies the system user of the plug insertion socket state relative to the plug.

15. The plug error insertion prevention system recited in claim 13, further comprising:

a plug control program for controlling the plug, the program including:

a plug insertion socket information transmission step of sending the first identification information to the desired plug insertion socket upon the plug approaching the desired plug insertion socket;

a response information receiving step of receiving response information from the plug insertion section; and

a plug state notification step of notifying a system user of the plug state relative to the desired plug insertion socket based on the response information received in the response information receiving step.

16. The plug error insertion prevention system recited in claim 2, further comprising:

a contactless identification tag control program for controlling the contactless identification tag, the program including:

a plug insertion socket information transmission step of sending the first identification information to the desired plug insertion socket when the plug approaches the desired plug insertion socket;

a response information receiving step of receiving response information from the plug insertion section; and

a plug state notification step of notifying a system user of the plug state relative to the desired plug insertion socket based on the response information received in the response information receiving step.

17. The plug error insertion prevention system recited in claim 14, further comprising:

a plug insertion section control program for controlling the plug insertion section, the program including:

a plug insertion socket information receiving step of receiving the first identification information sent from the plug;

a plug insertion socket information comparing step of comparing the first identification information received in the plug insertion socket information receiving step and the second identification information;

a response information generation step of generating response information to the plug based on a comparison result of the plug insertion socket information comparing step;

a response information transmission step of sending the response information generated in the response information generation step to the plug; and

a plug insertion socket state notification step of notifying the system user of the plug insertion socket state relative to the plug.

18. A plug error insertion prevention system comprising:

a plug; and

a plug insertion section;

wherein the plug includes:

a first identification information memory storing first identification information identifying a specified socket suitable for the plug;

a socket information transmitter sending the first identification information to a desired socket of the plug insertion section;



a response information receiver receiving response information from the plug insertion section; and

a plug state messenger notifying a system user of the plug suitability relative to the desired socket based on the response information, and

wherein the plug insertion section includes:

a second identification information memory storing second identification information identifying a specified plug suitable for the desired socket;

a first identification information receiver receiving the first identification information from the plug;

an identification information comparator comparing the first and second identification information;

a response information generator generating response information based on a comparison result of the identification information comparator;

a response information transmitter sending the response information to the plug; and

a socket suitability notifier notifying the system user of the desired socket suitability relative to the plug;

whereby the system prevents the plug from being inserted into an incorrect socket of the plug insertion section.